

Appln No. 09/437,205
Amdt date September 1, 2004
Reply to Office action of June 7, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of displaying a graphical element comprising the steps of:

filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution;

reducing a gray level of the multi-level values by at least one bit [~~prior to using them~~] to generate reduced multi-level values for use as alpha blend values; and

using the reduced multi-level values as the alpha blend values for the graphical element in a subsequent compositing stage,

wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering.

2. (Currently Amended) The method of displaying a graphical element of claim 1 wherein the reduced multi-level values are written into a display buffer where the reduced multi-level values are used as the alpha blend values when contents of the display buffer are composited with other graphics and video images.

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3. (Original) The method of displaying a graphical element of claim 1 wherein the graphical element is initially rendered at a higher resolution than the intended final display resolution.

4. (Previously Presented) The method of displaying a graphical element of claim 3 wherein the graphical element is initially rendered at four times the resolution of the intended final display resolution in at least a horizontal direction.

5. (Previously Presented) The method of displaying a graphical element of claim 3 wherein the graphical element is initially rendered at four times the resolution of the intended final display resolution in at least a vertical direction.

6. (Original) The method of displaying a graphical element of claim 1 wherein the low pass filter is a box filter.

7. (Currently Amended) A method of displaying a graphical element comprising the steps of:

filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution;

reducing a gray level of the multi-level values by at least one bit to generate reduced multi-level values;

storing the reduced multi-level values in a display buffer; and

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using the reduced multi-level values as alpha blend values for the graphical element in a subsequent compositing stage,

wherein the graphical element includes text, and the display buffer is defined to have a constant foreground color that is consistent with a desired foreground color of the text.

8. (Currently Amended) A method of displaying a graphical element comprising the steps of:

filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution;

reducing a gray level of the multi-level values by at least one bit to generate reduced multi-level values;

storing the reduced multi-level values in a display buffer; and

using the reduced multi-level values as alpha blend values for the graphical element in a subsequent compositing stage,

wherein the graphical element includes graphics, and the display buffer is defined to have a constant foreground color that is consistent with a desired foreground color of the graphics.

9. (Original) The method of displaying a graphical element of claim 1 wherein the alpha blend values include CLUT indexes, each CLUT index is associated with a CLUT entry, and each CLUT entry contains a CLUT alpha blend value.

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10. (Original) The method of displaying a graphical element of claim 1 wherein the alpha blend values are used to form alpha portions of pixels having a color portion and an alpha portion.

11. (Original) The method of displaying a graphical element of claim 10 wherein the pixels having color portions and alpha portions are in an alphaRGB (4,4,4,4) format.

12. (Previously Presented) The method of displaying a graphical element of claim 1 wherein the graphical element has a plurality of foreground colors, which are filtered using the low pass filter.

13. (Original) The method of displaying a graphical element of claim 12 wherein the filtered plurality of foreground colors are used as color portions of pixels having a color portion and an alpha portion.

14. (Original) The method of displaying a graphical element of claim 13 wherein the pixels having a color portion and an alpha portion are in an alphaRGB format.

15. (Original) The method of displaying a graphical element of claim 13 wherein the pixels having a color portion and an alpha portion are in an alphaYUV format.

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16. (Original) The method of displaying a graphical element of claim 12 wherein the filtered plurality of foreground colors are used as color choices in a CLUT format.

17. (Original) The method of displaying a graphical element of claim 1 wherein an outline of the graphical element, including all colors other than background color, is filtered using the low pass filter, wherein the graphical element has a plurality of foreground colors.

18. (Original) The method of displaying a graphical element of claim 17 wherein the filtered outline is used as an alpha per pixel value.

19. (Original) The method of displaying a graphical element of claim 18 wherein the filtered outline is used as the alpha per pixel value in a direct color format, the direct color format including an alphaRGB format.

20. (Original) The method of displaying a graphical element of claim 18 wherein the filtered outline is used as a choice of an alpha value per CLUT entry in a CLUT format.

21. (Currently Amended) A method of displaying a graphical element comprising the steps of:

filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution;

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reducing a gray level of the multi-level values by at least one bit [~~prior to using them~~] to generate reduced multi-level values for use as alpha blend values; and

using the reduced multi-level values as the alpha blend values for the graphical element in a subsequent compositing stage,

wherein the reduced multi-level values are written into a display buffer where the reduced multi-level values are used as alpha blend values when contents of the display buffer are composited with other graphics and video images, and

wherein the step of using the reduced multi-level values as the alpha blend values for the graphical element in a subsequent compositing stage comprises compositing the display buffer with other graphics and video contents while blending the display buffer with all layers behind it using alpha per pixel values.

22. (Currently Amended) A method of displaying a graphical element comprising the steps of:

filtering the graphical element with a low pass filter to generate a multi-level value per pixel at an intended final display resolution;

reducing a gray level of the multi-level values by at least one bit to generate reduced multi-level values; and

using the reduced multi-level values as alpha blend values for the graphical element in a subsequent compositing stage,

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wherein the reduced multi-level values are written into a display buffer where the reduced multi-level values are used as the alpha blend values when contents of the display buffer are composited with other graphics and video images, and

wherein opacity of the graphical element may be varied by specifying ~~[the]~~ an alpha value of the display buffer.

23. (Previously Presented) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values;
and

a display engine for compositing the graphical element with at least one graphics image using the multi-level values as alpha blend values,

wherein generation of the multi-level values do not depend on alpha blend values that existed prior to filtering,
and

wherein a gray level of the multi-level values is reduced by at least one bit prior to using them as the alpha blend values.

24. (Canceled).

25. (Original) The graphics display system for displaying a graphical element of claim 23 wherein the graphical element is

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initially rendered at a higher resolution than the intended final display resolution.

26. (Original) The graphics display system of claim 23 wherein the low pass filter is a box filter.

27. (Currently Amended) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values;
and

a display engine for compositing the graphical element with graphics images using the multi-level values as alpha blend values,

wherein the graphical element includes text, and the display buffer is defined to have a constant foreground color that is consistent with a desired foreground color of the text,
and

wherein a gray level of the multi-level values is reduced by at least one bit prior to using them as the alpha blend values.

28. (Currently Amended) A graphics display system for displaying a graphical element comprising:

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a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values;
and

a display engine for compositing the graphical element with graphics images using the multi-level values as alpha blend values,

wherein the graphical element includes graphics, and the display buffer is defined to have a constant foreground color that is consistent with a desired foreground color of the graphics, and

wherein a gray level of the multi-level values is reduced by at least one bit prior to using them as the alpha blend values.

29. (Previously Presented) The graphics display system of claim 23 wherein the alpha blend values include CLUT indexes, each CLUT index is associated with a CLUT entry, and each CLUT entry contains a CLUT alpha blend value.

30. (Previously Presented) The graphics display system of claim 23 wherein the alpha blend values are used to form alpha portions of pixels having a color portion and an alpha portion.

31. (Previously Presented) The graphics display system of claim 30 wherein the pixels having a color portion and an alpha portion are in an alphaRGB (4,4,4,4) format.

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32. (Previously Presented) The graphics display system of claim 23 wherein the graphical element has a plurality of foreground colors, which are filtered using the low pass filter.

33. (Original) The graphics display system of claim 32 wherein the filtered plurality of foreground colors are used as color portions of pixels having a color portion and an alpha portion.

34. (Original) The graphics display system of claim 33 wherein the pixels having a color portion and an alpha portion are in an alphaRGB format.

35. (Original) The graphics display system of claim 33 wherein the pixels having a color portion and an alpha portion are in an alphaYUV format.

36. (Original) The graphics display system of claim 32 wherein the filtered plurality of foreground colors are used as color choices in a CLUT format.

37. (Original) The graphics display system of claim 23 wherein an outline of the graphical element, including all colors other than background color, is filtered using the low pass filter, wherein the graphical element has a plurality of foreground colors.

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38. (Original) The graphics display system of claim 37 wherein the filtered outline is used as an alpha per pixel value.

39. (Original) The graphics display system of claim 38 wherein the filtered outline is used as the alpha per pixel value in a direct color format, the direct color format including an alphaRGB format.

40. (Previously Presented) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values;
and

a display engine for compositing the graphical element with graphics images using the multi-level values as alpha blend values, wherein a gray level of the multi-level values is reduced by at least one bit prior to using them as the alpha blend values,

wherein an outline of the graphical element, including all colors other than background color, is filtered using the low pass filter, wherein the graphical element has a plurality of foreground colors

wherein the filtered outline is used as an alpha per pixel value, and

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wherein the filtered outline is used as a choice of an alpha value per CLUT entry in a CLUT format.

41. (Currently Amended) A graphics display system for displaying a graphical element comprising:

a low pass filter for filtering the graphical element to generate multi-level values, one multi-level value per each pixel, at an intended final display resolution;

a display buffer for storing the multi-level values;
and

a display engine for compositing the graphical element with graphics images,

wherein translucency of the graphical element is varied by specifying the alpha value of the display buffer, and

wherein a gray level of the multi-level values is reduced by at least one bit prior to using them as the alpha blend values.

42. (Canceled)